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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
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Kamran Uz Zaman

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Kevin P Correll  
Perman & Green LLP  
425 Post Road  
Fairfield, CT 06430

EXAMINER

KAO, CHIH CHENG G


ART UNIT

PAPER NUMBER

2882

DATE MAILED: 06/07/2004

Please find below and/or attached an Office communication concerning this application or proceeding.

<b>Office Action Summary</b>	<b>Application No.</b> 09/629,204	<b>Applicant(s)</b> ZAMAN ET AL. 	
	<b>Examiner</b> Chih-Cheng Glen Kao	<b>Art Unit</b> 2882	

**-- The MAILING DATE of this communication appears n th cover sheet with the correspondence address --**  
**Period for Reply**

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

#### Status

- 1) ☒ Responsive to communication(s) filed on 06 October 2003.
- 2a) ☐ This action is **FINAL**.                      2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

#### Disposition of Claims

- 4) ☒ Claim(s) 1-27 is/are pending in the application.
- 4a) Of the above claim(s) \_\_\_\_\_ is/are withdrawn from consideration.
- 5) ☐ Claim(s) \_\_\_\_\_ is/are allowed.
- 6) ☒ Claim(s) 1-27 is/are rejected.
- 7) ☐ Claim(s) \_\_\_\_\_ is/are objected to.
- 8) ☐ Claim(s) \_\_\_\_\_ are subject to restriction and/or election requirement.

#### Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☒ The drawing(s) filed on 31 July 2000 is/are: a) ☐ accepted or b) ☒ objected to by the Examiner.  
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).  
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

#### Priority under 35 U.S.C. § 119

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All    b) ☐ Some \* c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
  2. ☐ Certified copies of the priority documents have been received in Application No. \_\_\_\_\_.
  3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).
- \* See the attached detailed Office action for a list of the certified copies not received.

#### Attachment(s)

- |  |   |
|--|---|
| 1) <input checked="" type="checkbox"/> Notice of References Cited (PTO-892)  | 4) <input type="checkbox"/> Interview Summary (PTO-413)<br>Paper No(s)/Mail Date. _____ |
| 2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948)                                   | 5) <input type="checkbox"/> Notice of Informal Patent Application (PTO-152)             |
| 3) <input type="checkbox"/> Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08)<br>Paper No(s)/Mail Date _____ | 6) <input type="checkbox"/> Other: _____  |

## **DETAILED ACTION**

### ***Drawings***

1. The proposed drawings filed 11/8/02 have been approved by the Examiner. Corrected replacement drawings are now required in reply to the Office action to avoid abandonment of the application. The requirement for corrected drawings will not be held in abeyance.

### ***Claim Objections***

2. Claims 1, 6, 11, 16, 18-20, 23, 24, and 26 are objected to because of the following informalities, which appear to be minor draft errors including grammatical and lack of antecedent basis problems.

In the following format (location of objection; suggestion for correction), the following suggestions may obviate their respective objections: (claim 1, line 2, "OPC devices"; replacing "OPC" with - -organic photo conductor (OPC)- -), (claim 1, line 10, "a ratio of the number"; replacing "the" with - -a - -), (claim 1, line 11, "the total"; replacing "the" with - -a - -), (claim 6, line 4, "values and classification result"; replacing "result" with - -results- -), (claim 11, line 2, "a OPC"; replacing "a OPC" with - -an organic photo conductor (OPC) device- -), (claim 11, line 4, "the OPC"; inserting - -device- - after "OPC"), (claim 11, line 6, "the OPC device"; replacing "a OPC" in line 2 with - -an organic photo conductor (OPC) device- -), (claim 11, lines 6-7, "the step of capturing providing"; inserting - -including a step of- - after "capturing"), (claim 11, line 12, "the number"; replacing "the" with - -a- -), (claim 11, line 13, "the total"; replacing "the" with - -a- -), (claim 16, line 2, "a OPC"; replacing "a OPC" with - -an organic photo conductor

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(OPC) device- -), (claim 16, line 4, “the OPC”; inserting - -device- - after “OPC”), (claim 16, line 6, “the OPC device”; replacing “a OPC” in line 2 with - -an organic photo conductor (OPC) device- -), (claim 16, lines 6-7, “the step of capturing providing”; inserting - -including a step of- - after “capturing”), (claim 16, line 12, “the number”; replacing “the” with - -a- -), (claim 16, line 13, “the total”; replacing “the” with - -a- -), (claim 18, line 2, “the OPC”; inserting - -device- - after “OPC”), (claim 19, line 2, “the OPC”; inserting - -device- - after “OPC”), (claim 20, line 12, “the number”; replacing “the” with - -a- -), (claim 20, line 13, “the total”; replacing “the” with - -a- -), (claim 23, line 12, “the number”; replacing “the” with - -a- -), (claim 23, line 13, “the total”; replacing “the” with - -a- -), (claim 23, line 19, “the total number”; replacing “the” with - -a- -), (claim 24, line 10, “the pixels”; deleting “the”), (claim 24, line 12, “the number”; replacing “the” with - -a- -), (claim 24, line 13, “the total”; replacing “the” with - -a- -), (claim 26, line 9, “the pixels”; deleting “the”), (claim 26, line 11, “the number”; replacing “the” with - -a- -), (claim 26, line 12, “the total”; replacing “the” with - -a- -), and (claim 26, last line, “the defect”; replacing “the defect” with - -BEW defects- -).

For purposes of examination, the claims have been treated as such. Appropriate correction is required.

### ***Claim Rejections - 35 USC § 112***

The following is a quotation of the second paragraph of 35 U.S.C. 112:

The specification shall conclude with one or more claims particularly pointing out and distinctly claiming the subject matter which the applicant regards as his invention.

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3. Claim 6 is rejected under 35 U.S.C. 112, second paragraph, as being indefinite for failing to particularly point out and distinctly claim the subject matter which applicant regards as the invention.

Regarding claim 6, the phrase "may be used" renders the claim indefinite because it is unclear whether the limitation(s) following the phrase are part of the claimed invention. See MPEP § 2173.05(d).

The Examiner has examined the claims as follows to the best of his understanding.

***Claim Rejections - 35 USC § 103***

The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

4. Claims 1, 4, 6, 8, 9, 11-13, 20, and 24-27 are rejected under 35 U.S.C. 103(a) as being unpatentable over Brown et al. (US Patent 5157463) in view of Herbert et al. (US Patent 5,352,329).

5. Regarding claims 1 and 24-26, Brown et al. discloses a system and method comprising an illumination source (Fig. 2, #13), at least one optical sensor camera (Fig. 2, #16) providing a band of captured illumination with gray level picture data of a plurality of distinguishable pixels which are darker and lighter (col. 3, line 67, to col. 4, line 6), and a controller for determining a

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ratio of a number of distinguishable pixels to a total number of pixels in the band, the controller comprising a threshold detector for sensing defects (col. 3, lines 55-66, and col. 6, lines 1-10).

However, Brown does not disclose inspecting OPC devices for bottom edge wipe defects.

Herbert et al. teaches inspecting OPC devices for bottom edge wipe defects (col. 1 to col. 2, line 11).

It would have been obvious, to one having ordinary skill in the art at the time the invention was made, to modify the system of Brown et al. with the inspection of OPC devices of Herbert et al., since one would be motivated to incorporate this to determine whether bottom edge wipe methods are successful and reduce defects that may cause problems such as interference with charging devices or developer housing (col. 1, lines 30-40, and col. 2, lines 1-11) as implied from Herbert et al.

6. Regarding claims 11, 20, and 27, Brown et al. further discloses illuminating (Fig. 2, #13), capturing illumination (Fig. 2, #16), processing data (Fig. 2, #17), and classifying based upon a comparison of the captured reflected illumination with a threshold level to compare to a predetermined ratio (col. 3, lines 60-66).

7. Regarding claims 4 and 12, Brown et al. further discloses an emitter (Fig. 2, #13), which would necessarily emit electromagnetic radiation of at least one wavelength due to characteristics of light.

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8. Regarding claim 6, Brown et al. further discloses a data storage area to store predetermined threshold values and classification results (Figs. 1 and 2, #17).

9. Regarding claims 8 and 9, Brown et al. further discloses a visual display monitoring device for alerting a user (Figs. 1 and 2, #19).

10. Regarding claim 13, Brown et al. would necessarily digitize the reflected illumination (Fig. 3, #69, and Fig. 1, #17) so one can process signals on a computer.

11. Claims 2, 3, 5, 21, and 22 are rejected under 35 U.S.C. 103(a) as being unpatentable over Brown et al. in view of Herbert et al. as respectively applied to claims 1 and 20 above, and further in view of Roy et al. (US Patent 6118540).

Brown et al. in view of Herbert et al. suggests a method and device as recited above.

However, Brown et al. does not disclose a light emitting diode (LED), laser, visible light source, or CCD camera.

Roy et al. teaches an LED (col. 2, line 53), laser (col. 2, lines 60-64), visible light source (col. 2, lines 51-53), or CCD camera (col. 2, lines 38).

It would have been obvious, to one having ordinary skill in the art at the time the invention was made, to modify the suggested method and device of Brown et al. in view of Herbert et al. with the LED, laser, visible light source, or CCD of Roy et al., since one would be motivated to incorporate these components to better perform computer vision analysis with a single camera (col. 2, lines 46-49) as implied by Roy et al.

12. Claims 7, 15, and 16 are rejected under 35 U.S.C. 103(a) as being unpatentable over Brown et al. in view of Herbert et al. as respectively applied to claims 1 and 11 above, and further in view of Maeda et al. (US Patent 5153444).

13. Regarding claim 7, Brown et al. in view of Herbert et al. suggests a system as recited above.

However, Brown et al. does not disclose a threshold detector comprising an array of pixels and a pixel counter.

Maeda et al. teaches a threshold detector comprising an array of pixels and a pixel counter (col. 10, lines 5-35).

It would have been obvious, to one having ordinary skill in the art at the time the invention was made, to modify the suggested system of Brown et al. in view of Herbert et al. with the pixel counter for the array of pixels of Maeda et al., since one would be motivated to incorporate it to better count the number of defective pixels to see if it reaches a preset value and indicates a defect as implied from Maeda et al. (col. 10, lines 27-50).

14. Regarding claims 15 and 16 and for purposes of being concise, Brown et al. in view of Herbert et al. suggests a method as recited above.

However, Brown et al. does not disclose comparing with a gray pixel count.

Maeda et al. teaches comparing with a gray (Abstract, line 2) pixel count (col. 11, lines 34-37).



It would have been obvious, to one having ordinary skill in the art at the time the invention was made, to modify the suggested method of Brown et al. in view of Herbert et al. with the pixel count of Maeda et al., since one would be motivated to incorporate this to better determine defects (col. 11, lines 34-41) as implied from Maeda et al.

15. Claim 10 is rejected under 35 U.S.C. 103(a) as being unpatentable over Brown et al. in view of Herbert et al. as applied to claim 8 above, and further in view of Langley (US Patent Application Publication 2001/0012392).

Brown et al. in view of Herbert et al. suggests a system as recited above.

However, Brown et al. does not disclose an audio monitor.

Langley teaches an audio monitor (Page 2, Paragraph 24).

It would have been obvious, to one having ordinary skill in the art at the time the invention was made, to modify the suggested system of Brown et al. in view of Herbert et al. with the audio monitor of Langley, since one would be motivated to incorporate it to better warn the user of defects (Page 2, Paragraph 24) as implied from Langley.

16. Claims 14 is rejected under 35 U.S.C. 103(a) as being unpatentable over Brown et al. in view of Herbert et al. as applied to claim 11 above, and further in view of Lindow et al. (US Patent 4748335).

Brown et al. in view of Herbert et al. suggests a method as recited above.

However, Brown et al. does not disclose analog signals from the captured illumination.

Lindow et al. teaches analog signals from the captured illumination (col. 1, lines 20-31).

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It would have been obvious, to one having ordinary skill in the art at the time the invention was made, to modify the suggested device of Brown et al. in view of Herbert et al. with the analog signals of Lindow et al., since one would be motivated to incorporate this to more easily convert signals from a camera to a output device such as a CRT (col. 1, lines 20-31) as shown by Lindow et al.

17. Claim 17 is rejected under 35 U.S.C. 103(a) as being unpatentable over Brown et al. in view of Herbert et al. as applied to claim 11 above, and further in view of Nakagawa et al. (US Patent 4148065).

Brown et al. in view of Herbert et al. suggests a method as recited above.

However, Brown et al. does not disclose comparing with a predetermined analog voltage level.

Nakagawa et al. teaches comparing with a predetermined analog voltage level (Fig. 4, #56A, and col. 5, lines 37-39).

It would have been obvious, to one having ordinary skill in the art at the time the invention was made, to modify the suggested method of Brown et al. in view of Herbert et al. with the comparison of analog voltage levels of Nakagawa et al., since one would be motivated to incorporate this to make the video signal more intelligible (col. 5, lines 39-50).

18. Claims 18, 19, and 23 are rejected under 35 U.S.C. 103(a) as being unpatentable over Brown et al. in view of Herbert et al. as applied to claim 11 above, and further in view of Kanno et al. (US Patent 6069971).

For purposes of being concise, Brown et al. in view of Herbert et al. suggests a method as recited above.

However, Brown et al. does not disclose classifying by acceptable, non-acceptable, or quasi-acceptable.

Kanno et al. teaches classifying by acceptable, non-acceptable, or quasi-acceptable (Fig. 8, “ST109”, “ST110”, and “ST111”).

It would have been obvious, to one having ordinary skill in the art at the time the invention was made, to modify the suggested method of Brown et al. in view of Herbert et al. with the classifying of Kanno et al., since one would be motivated to incorporate this to ensure that a product is within tolerable levels of quality as implied from Kanno et al. (col. 9, lines 3-23) and to improve work efficiency as implied from Kanno et al. (col. 9, lines 3-23) by having the designer further look at quasi-acceptable objects only rather than all objects that are not acceptable.

### ***Response to Arguments***

19. Applicant's arguments with respect to claims 1-27 have been considered but are moot in view of the new ground(s) of rejection.

Regarding Herbert et al., a method of inspection for BEW defects is implied (col. 1, lines 63-65, and col. 2, lines 3-5). Regarding Kanno et al., although Kanno et al. does not seem to disclose a population of pixels, Kanno et al. still applies for its teaching of acceptable, non-acceptable, or quasi-acceptable classifications of defects.

***Conclusion***

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Chih-Cheng Glen Kao whose telephone number is (571) 272-2492. The examiner can normally be reached on M - F (9 am to 5 pm).

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Ed Glick can be reached on (571) 272-2490. The fax phone number for the organization where this application or proceeding is assigned is 703-872-9306.

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gk



**DAVID V. BRUCE  
PRIMARY EXAMINER**